

# Sanitary Sewer and Water Systems Analysis

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# Sanitary Sewer and Water Systems Analysis

This chapter summarizes the conditions of the sanitary sewer and water for the City of Eau Claire relative to their contributions to this overall comprehensive growth management plan.

## Utilities Systems Issues

Issues are questions to be discussed, debated and resolved during the planning process in light of the other issues.

These are the major public sewer and water systems issues identified through the analysis of conditions.

1. **Sanitary Sewer System Control:** Should the City of Eau Claire change its long-standing policy and allow extensions of sanitary sewer mains outside the City without annexation to the City?

In which locations, if any, should the Regional Planning Commission be requested to expand or contract the Sewer Service Area?

*While this plan was being prepared, landowners in the newly-formed Village of Lake Hallie were seeking approval from the City to have a sanitary sewer main extended along Hastings Way to serve their commercial properties. As with the problem of semi-urban perimeter lots, sewer service without annexation would result in financial costs to the City, loss of City property tax base, loss of control over growth management, uncompensated use of City facilities and services, and increased loss of allegiance to the central city and its challenges.*

2. **Regional Planning:** Can Eau Claire and its township neighborhoods agree on a pattern of future land use, annexation staging and utilities service (including locations for major facilities such as water towers)?

*Coordination of fringe growth is the key issue of this comprehensive plan and closely related to the first issue, above. Some key opportunities for utilities system growth have been foreclosed or made more expensive by lack of an agreed regional plan. Utility expansion problems raise public costs and make the entire region less competitive.*

## **Sanitary Sewer System**

The basic configuration of the City's sanitary sewer system is illustrated by Figure 9-1, which includes the location of the treatment plant, the major collection lines (interceptors) and the pumping (lift) stations.

### **Service to the City**

Since the 1970's, it has been the policy of the City that public sewer and water service will be extended only to locations within the City of Eau Claire or those locations that have successfully petitioned for annexation. For a further description of this policy, refer to the Land Use Analysis, Land Use Trends and Forces, Utility Systems.

Likewise, the City will not approve sewer extensions beyond the 2010 Urban Sewer Service Boundary unless the regional Urban Sewer Service Plan is amended.

### **Staging Plan**

The City adopted a plan as part of the 1993 comprehensive plan to sequentially extend the major (interceptor) sewer lines. That plan established priority for service as follows: :

1. Existing sewered areas
2. Expansions from existing lines
3. Trunk line facility expansions
4. Long-term trunk line expansions.

Refer to Figure 9-1, Sanitary Sewer System, for the locations of these service areas.

Sewer and water line extensions in advance of the Staging Plan may be possible depending on the circumstances relative to development demand, the cost of the extension, arrangements made for the financing of the extensions and the capacity of other City facilities such as parks and streets. The decision to provide utilities and services will be made on a case-by-case basis.

## Eau Claire Sewer Service Policy

The following section is a very important aspect of the comprehensive planning analysis.

Since the 1970s, it has been the policy of the City of Eau Claire that property may receive sanitary sewer service only if it is located within the City. Thus, owners of perimeter properties must petition the City for annexation and have their petition approved by the City and not successfully challenged by the Town. The reasoning for this policy has been so that:

1. The City can recover its cost for the treatment plant and interceptor lines, and the maintenance and replacement of those facilities
2. The City can manage the intensity and timing of fringe development and, thus, the flow through its system
3. The City can coordinate perimeter growth with the systems of roads, parks, drainage and other public facilities and services
4. The City can manage the quality of perimeter urban development through its zoning ordinance, which is more demanding than the regulations of the adjacent Towns.
5. The City can enjoy the benefits of tax base growth
6. The City can include in its population and civic life those new residents and business owners.

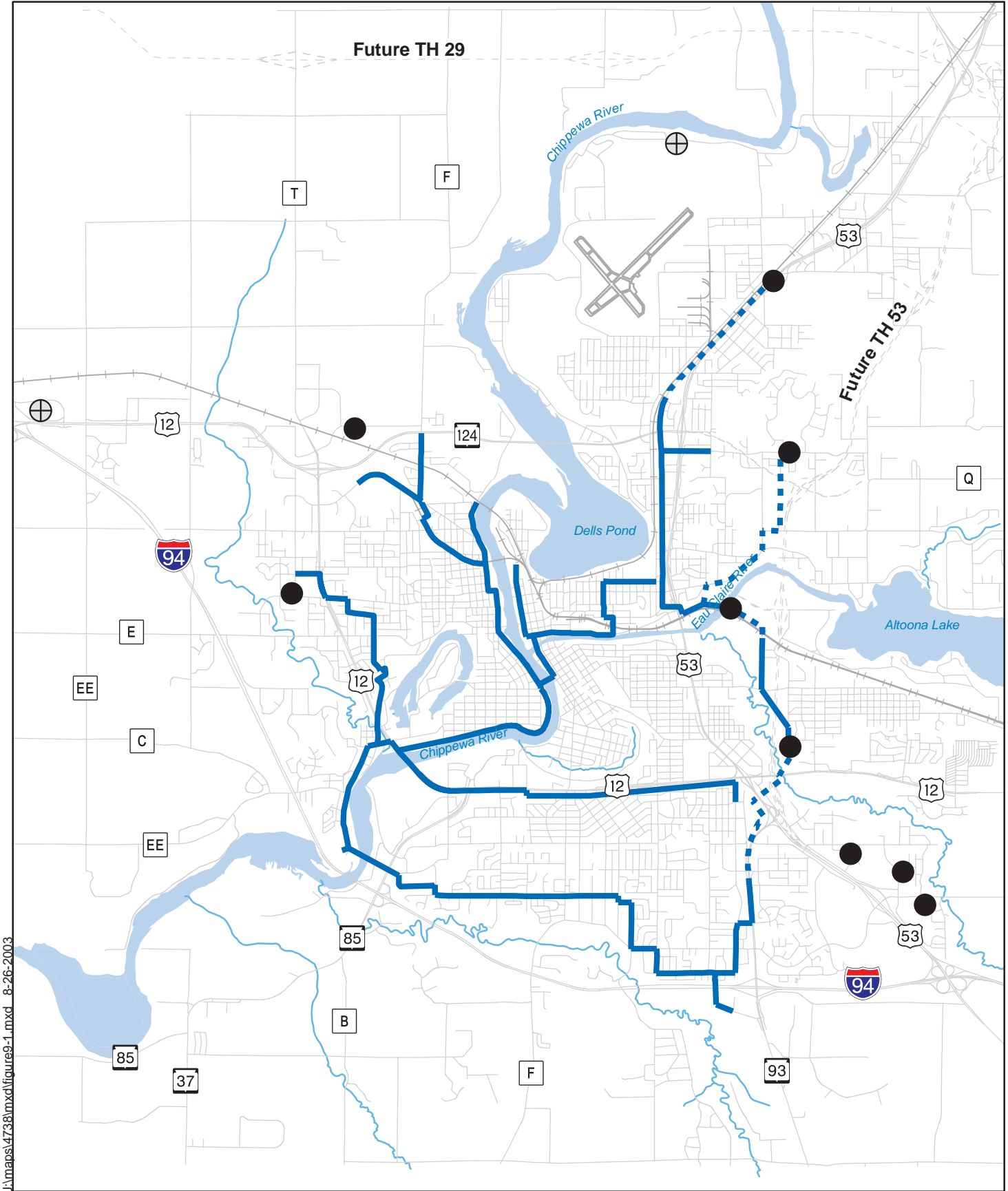
The City of Eau Claire won the right to uphold this policy through a legal challenge in the 1970s that went all the way to the US Supreme Court.

By following the policy described above, the City has been able to promote a coordinated and cost-effective pattern of urban growth. The City believes that its coordinated and comprehensive management of urban growth, together with those of the Cities of Chippewa Falls and Altoona, has helped make this metropolitan region competitive with other similarly-sized metropolitan areas in terms of economic development and quality of life. Additionally, the City believes that this policy has minimized inconsistent, haphazard, unrealistic and competitive expansion that would have been without regard for present and probable future development in the overall public interest.

**Implications for the Village of Lake Hallie:** In 2002, the Town of Hallie petitioned the State of Wisconsin and was incorporated as the Village of Lake Hallie, having met the standards prescribed in Section 66.0207, Wisconsin Statutes. That meant, among other things, that landowners in the new Village could no longer petition the City of Eau Claire for annexation. According to the Town's incorporation petition they assumed that the new village would continue to develop with on-site sewage systems. Presently, the Village of Lake Hallie does not receive any sanitary sewer service from another municipality.

Without a change in the City's sewer service extension policy, the only way that the Village of Lake Hallie will be serviced would be either (a) detachment and incorporation of property from the Village to the City or (b) the City being compelled to serve the Village by the Wisconsin Department of Natural Resources or the courts.

In any case, the City of Eau Claire will no longer be growing into what was the Town of Hallie. That may be for the best, however, since the Hastings Way (US 53) corridor in the Village is replete with urban design and development shortcomings and problems.



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- Existing Lift Stations
- ⊕ Planned Lift Stations
- Existing Trunk Lines
- - - Planned Trunk Lines

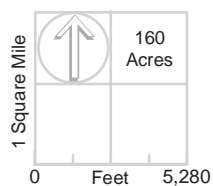


Figure 9-1

**Sanitary Sewer System**

**Implications for other Adjacent Towns:** Portions of the Towns of Seymour, Washington, New Brunswick and Union are more favorable and pose fewer difficulties – but even likely urban growth locations in those Towns have been compromised by large-lot subdivisions that cannot economically be served with sewer and water. In fact, in the Towns of Seymour and Washington, more than half of the land in the Sewer Service Area has been used for large-lot housing, or to a lesser extent, businesses and industry.

## Treatment Plant

The Eau Claire treatment plant, located near the Chippewa River in the southwestern corner of the city, has a capacity of 12 million gallons per day (mgd) but treats an average of only about 8 mgd. By 2008, the plant will need to be updated, then later (probably by 2020) will need to be expanded and rehabilitated. Trace copper in sewage from major local manufacturers is not presently a problem since each is performing pre-treatment for heavy metals and because of current lower manufacturing levels, however that could become an issue again in the future. The plant is presently meeting wastewater quality standards. The plant's sludge storage facility is inadequate and should be expanded.

## Collection Lines

Eau Claire receives sewage from the City of Altoona under a contract. Altoona had its own sewage treatment plant and collection lines but the plant became inadequate and it was determined in the 1970s to be more cost-effective to contract with the Eau Claire for treatment service. That is the only instance of Eau Claire extending service to another jurisdiction.

**Hallie Interceptor:** The City had previously sized its interceptor to serve the western half of the area previously known as the Town of Hallie. Now that that location is an incorporated Village, no annexations to Eau Claire are possible and the City will not extend sewer, according to its long-standing policy. In addition, the Town stated at the hearing before the State Department of Administration that sewer service from Eau Claire or Chippewa Falls would not be needed, as they could use on-site systems. That unused treatment capacity could now be reallocated and the Urban Sewer Service Area redrawn when the regional sewer plan is updated later in this decade (before 2010).

The sewage interceptor lines have adequate capacity to handle the flows forecast for their service areas. Previous capacity problems have been resolved through improvements during the past ten years and by diversions away from lines that run through Downtown to a line that passes through Altoona and southeastern Eau Claire.

**Northwest Interceptor:** The Northwest Interceptor was built since the 1993 comprehensive plan and serves the Sherman Creek valley out to US Highway 124 (the North Crossing). The line was recently extended to rescue a subdivision of large-lot houses south of the highway that was built with individual wells and on-site systems that were failing. This interceptor is now available to serve a large Stage 3 area planned for housing and industry all around the intersection of Claremont Avenue (County Highway T) and US 124.

The commercial development on either side of Highway 124 near I-94 is in Union Township and served by on-site systems. That location will eventually need service from

the City via a casing under Highway 124, including a lift station. Until then, service will be from on-site systems.

**Seymour Interceptor and Lift Station:** A new lift station and interceptor line was recently installed on the east side of the community in conjunction with the US 53 realignment. That lift station will replace another and help relieve an interceptor line in central Eau Claire. It will also increase the capacity available to locations presently in the Town of Seymour. Sewage from the Seymour area will be routed under the Eau Claire River and through an interceptor that was extended to serve Altoona in the early 1980s. (It was determined that it would be more cost effective to serve the cities of Eau Claire and Altoona from a single treatment plant rather than upgrade the Altoona plant.)

**Otter Creek Valley:** Three lift stations will be necessary to serve this Stage 3 and Stage 4 low area near the creek.

**South of I-94:** Gravity sewer is available to serve some of the growth along US 93 south of I-94 but a lift station will be necessary to broaden the service area.

As the area south of the Oakwood Mall is served, a casing is expected to be run under the freeway through which a sewer line could pass to serve the area east of US 93 and south of I-94. One or two lift stations will be needed to serve the areas along the US 53 corridor and Otter Creek.

One of the related problems is that the Town has been allowing unsewered housing subdivisions at such a fast pace that the land in the Urban Sewer Service area is rapidly being consumed.

**Cameron Street at I-94:** A sewer line is available to serve land east of I-94 presently in Union Township and locations west of the freeway. A freeway interchange has been discussed with the Wisconsin DOT for that location, which could boost intensive growth on both sides of the highway. As with many other sites around Eau Claire where the public has made or could make road and utility investments, valuable land in this vicinity has been highly underutilized by very-large-lot unsewered housing in the Town. If perimeter growth could be better planned, regulated and staged, private land values could be greatly enhanced and public costs reduced.

**First Street Interceptor:** A sewer line has been extended under US 124 to serve development along the Chippewa River. As part of that subdivision process, the land developer was able to secure a major wooded site and convey it to the City for a new Community Park.

**Jeffers Road Corridor:** A sewer line in this corridor north of US124 has also been installed to serve industrial and residential growth. A lift station will be needed to serve the part of this area that is downhill toward the river.

## Assessment Policy

The policy of the City of Eau Claire is that 100 percent of the cost of extending sewer or water lateral lines (along with local and collector streets) will be paid by the land developer. Sewer interceptors, which are major lines that serve a broad area and collect sewage from the lateral lines, will usually be financed, designed and built by the City and their costs assessed to all the benefiting landowners. In some cases, the City is requiring that land developers pay for off-site improvements such as installing a sewer lift station or extending a water line to a site.

Thus, taxpayers in the older neighborhoods no longer share the cost of utilities for fringe development, as they did prior to 1990, when the City paid 40 percent of the cost. This was an important change. No longer can it be said that compact, sewerd fringe growth costs the rest of the City money, at least not for local streets, sewer lines or water lines.

(Regarding park improvements in new areas, since the City does not, as of 2003, have an ordinance requiring a land developer to give parkland and/or cash to the City for park improvements, some or all of those costs are still being spread across the entire community.)

## Regional Sanitary Sewer System Plan

The West Central Wisconsin Regional Planning Commission has prepared the *Chippewa Falls – Eau Claire Urban Sewer Service Plan for 2010*, a document that meets the requirements of the Wisconsin Department of Natural Resources.

**Purpose:** The purpose of this plan is to:

1. Project future needs for sewer service and establish the geographic extent of the sewer service areas for the year 2010.
2. Provide technical data for designing cost-effective and environmentally sound sewage treatment configurations
3. Define the procedures for reviewing boundary and plan amendments
4. Identify sensitive environmental areas and protect them from development
5. Guide government interaction and be used to prepare community plans.

**Acreage Estimates:** The plan estimated the amount of land that would be needed to accommodate development out to the year 2010 based on a forecast of households and jobs, minus the land that should be protected for environmental purposes. The analysis considered major undeveloped areas within the cities, both sewerd and unsewerd, and planned land use from local plans. The average and peak total sewage flows to each major sewage line (called interceptors) was estimated along with the average daily and peak flows to the two treatment plants.

Unfortunately, there is far too little acreage within the Sewer Service Area to accommodate forecast growth because:

1. There was no acreage factor include to provide “extra” land. That additional land would allow market competition to constrain costs and would send a signal to Town planners about which locations are expected to become urban and should be zoned appropriately.



2. Much of the Sewer Service Area is being consumed by large-lot semi-rural, semi-urban housing lots at a rapid rate.

This shortcoming will be addressed in the comprehensive plan.

**Urban Sewer Service Area:** The Sewer Service Boundary was adjusted outward in five locations to accommodate growth. Three of those benefited Eau Claire:

1. Near US 124 and County Highway T in Union Township
2. South of I-94 near State Trunk Highway 93 in Washington Township
3. In western Seymour Township

The revised Sewage Service Boundary was reflected in Eau Claire's 1993 comprehensive plan.

**Treatment Plant Alternatives:** The plan also examined several alternatives for regional sewage treatment plans and concluded that using the existing two sites (one in Eau Claire and one in Chippewa Falls) would be the most cost-effective.

## **Water System**

### **Supply and Purification**

Potable water in Eau Claire is obtained from the groundwater supply via eighteen wells located along the northeast shore the Chippewa River north of Dells Pond. The wells are drilled approximately 100 feet deep into sand and gravel deposits overlaying granite bedrock. The purification plant, is located near the wells, was upgraded in 2000 to produce up to 22 million gallons per day. Summer peak demands have been in the range of 16 to 19 million gallons per day. Thus, there have been very few sprinkling bans. The last official ban was in 1988.

Refer to Figure 9-2, Water System,

### **Distribution and Storage**

The water distribution system consists of pipes ranging in size from 2 to 36 inches, most of which are in good condition. There are a few long dead ends that need to be looped. The storage system has 1.5 days of capacity, which is adequate. A water system master plan should be prepared to anticipate capital improvements necessary to continue to enlarge the network.. The present plan has not been update to reflect improvements in the past ten years.

### **Pressure Zones**

The North Pumping Station, located near the well field, has the ability to serve locations up to an elevation of approximately 920 feet. Three zones of the city require booster pumps since their elevations are above 920. These zones are located in the northeast (up to 1055 feet), northwest (up to 1000 feet) and southeast (up to 1050 feet). portions of the city.

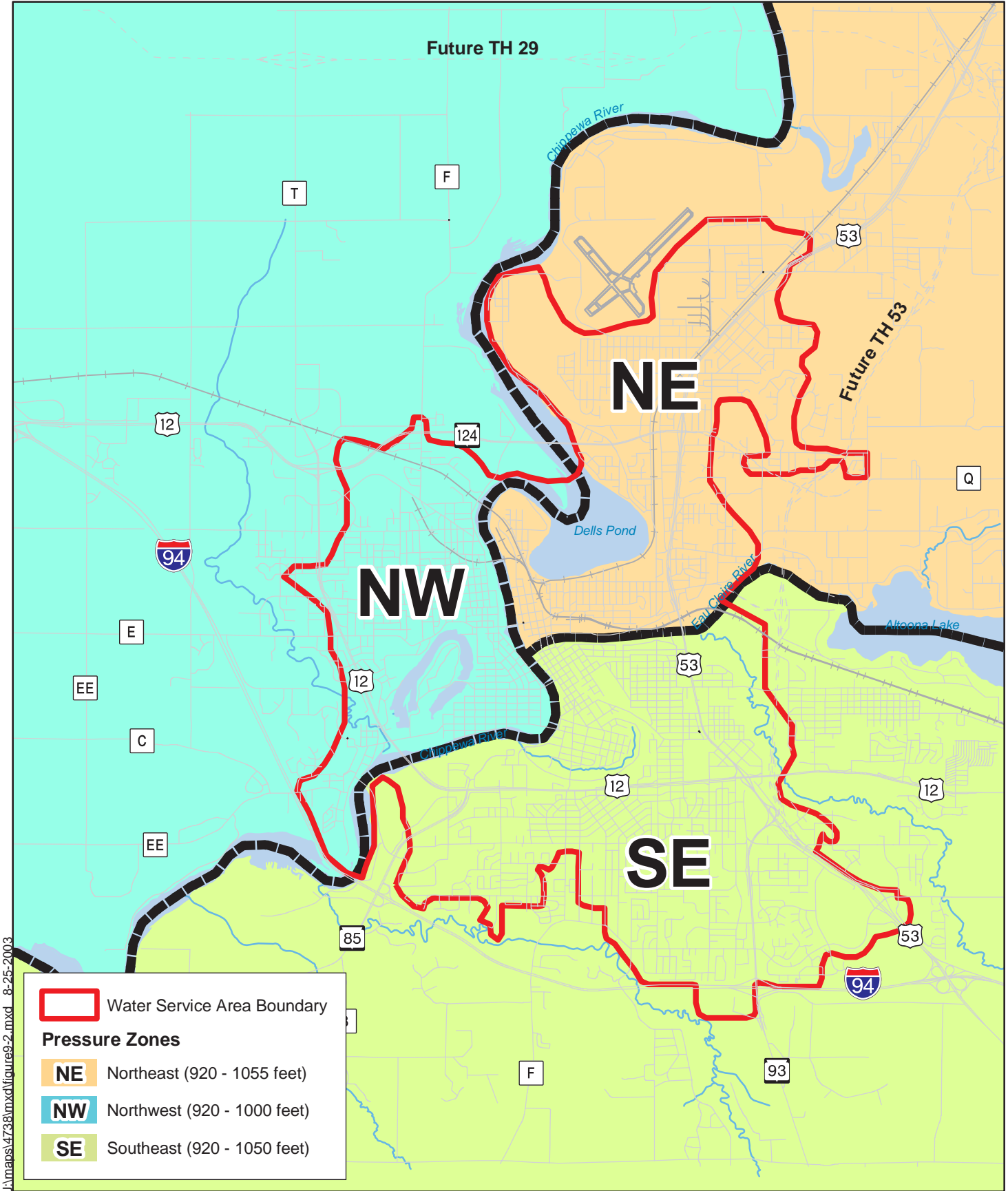
### **Service Area**

The present service area boundaries for the water system are defined by the existing City limits and actions of the former Washington Heights Sanitary District. The future service area boundary is assumed to coincide with that of the sanitary sewer system. The city of Altoona is excluded from the service area boundary.

Future development in the areas northeast and southeast of the city can be served by the existing high pressure zones in those areas. Development in the northwest has been aided by a recent system improvements there.

## **Regional Planning**

As with the sanitary sewer system and the road system, lack of regional planning and agreement has foreclosed opportunities for efficient growth and has increased public and private costs. Very-large-lot housing with private wells has made many perimeter locations uneconomic to be served by public lines. In a specific instance, water service to a subarea was blocked or harmed when the Town allowed potential hilltop water tower sites to be subdivided for housing.



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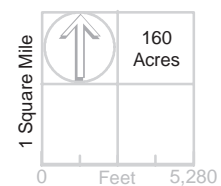


Figure 9-2

**Water System**